REMARKS

1. Summary of Office Action Mailed September 20, 2006

In the office action mailed September 20, 2006, with claims 1-4 pending, the Examiner (i) rejected claims 1-3 under 35 U.S.C. § 103(a) as being unpatentable over the combination of U.S. Patent 6,519,456 (Antonio), U.S. Patent 5,915,212 (Przelomiec), and U.S. Patent 6,532,249 (Hwang); and (ii) rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Antonio, Przelomiec, Hwang, and U.S. Patent 5,872,823 (Sutton).

2. Pending Claims

Presently pending in this application are claims 1-4, of which only claim 1 is independent, and of which only claim 1 is amended herein.

3. Response to Examiner's Rejections

The Examiner rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Antonio, Przelomiec, and Hwang. Applicants have amended claim 1 to clarify the scope of the claimed subject matter, and respectfully request reconsideration. As amended, claim 1 is directed to a base transceiver station (BTS) comprising a BTS main processing unit, a multi-rate channel unit, a signal transformation unit, and a wireless unit. With respect to forward-link communication, the multi-rate channel unit processes an inter-channel communication, each channel having a different data rate. Furthermore, the multi-rate channel unit produces a digital input signal.

That digital input signal is received by the signal transformation unit, which transforms and modulates that digital input signal. The signal transformation unit

comprises a digital-signal transformation unit and an analog-signal transformation unit. The digital-signal transformation unit converts the digital-input signal into a medium-frequency analog signal. For example, as shown in Applicant's Figure 2, a Digital Up Converter Assembly (DUCA) outputs a 70 MHz signal to an Analog Up Converter Assembly (AUCA). The analog-signal transformation unit (e.g. the AUCA) receives the medium-frequency analog signal from the digital-signal transformation unit and outputs an analog output signal.

The analog-signal transformation unit is what includes radio frequency (RF) switches for dynamically selecting one of a plurality of bandpass filters to provide selective forward-link-bandwidth operation. In particular, the selected bandpass filter determines the bandwidth of the analog output signal produced by the signal transformation unit. This is shown in Applicant's Figure 5, which generally depicts the AUCA as elements 50-62, where included therein is a saw filter 56. That filter, as shown in Figure 6, includes the switches and bandpass filters for determining the bandwidth of the analog output signal that is output from the signal transformation unit.

Finally, the wireless unit is connected to the signal transformation unit, and receives the analog output signal from the signal transformation unit (at the selected bandwidth) and wirelessly communicates that analog output signal to a mobile station.

Thus, in general, the BTS of claim 1 is capable of handling calls of different data rates and having modulated carriers of different bandwidths. In particular, it is able to be configured by dynamically selecting (via RF switches) a bandpass filter that is appropriate for the bandwidth of each particular carrier frequency. The BTS is thereby able to provide selective bandwidth operation on the forward link. That is, the BTS can

dynamically switch between operating with a particular carrier frequency at a first bandwidth (such as 1.25 MHz) and operating with that carrier frequency at a second bandwidth (such as 5.00 MHz) by operation of the RF switches.

Among the requirements to establish a *prima facie* case of obviousness is that the prior art references when combined must teach or suggest all the claim limitations. MPEP § 2143. None of the cited references – nor the combination thereof – teach a BTS having the above-referenced signal transformation unit of claim 1. For at least this reason, claim 1 is patentable over the cited combination of references.

As stated by the Examiner in the September 20, 2006 office action, Antonio fails to disclose radio frequency switches to dynamically select one of a plurality of bandpass filters to provide selective forward-link bandwidth operation. Thus, Applicant will address whether this deficiency is made up for by either or the combination of Przelomiec and Hwang. Applicant respectfully submits that it is not.

First, Przelomiec – this reference, and specifically the portion cited by the Examiner in the September 20, 2006 office action (Figure 4 and col. 7, lines 4-40), pertains not to bandwidth selection but to frequency-band selection. That is, Przelomiec provides switches and filters for selecting entire sets of frequencies. (See Przelomiec, col. 6, line 49 to col. 7, line 50) This permits Przelomiec's transmitter to "roam seamlessly and compatibly into two different frequency bands such as the cellular and land mobile radio frequency bands." (Przelomiec, col. 7, lines 48-50) Thus, Przelomiec does not provide the selective forward-link-bandwidth operation of claim 1.

With respect to Hwang, this reference does involve bandwidth selection on the forward link. However, Hwang does not teach or suggest the BTS of claim 1. In

particular, as stated, claim 1 is directed to a BTS where the digital-signal transformation unit (e.g. DUCA) produces a medium-frequency (e.g. 70 MHz) analog signal, and passes that signal into the analog-signal transformation unit (e.g. AUCA) where a simple switch picks a bandpass filter to determine the bandwidth of the analog output signal.

Hwang, however, as disclosed in col. 5-6, discloses a different and more complex arrangement, where a bandwidth control signal controls a zero generator as one input into a digital/analog converter (DAC), such that the output of the DAC varies in its data rate based on that bandwidth control signal. That same control signal is also used by a switching element 222 (in Figure 2) to pick an entirely separate circuit for converting this varied-data-rate digital signal into a medium-frequency analog signal of a particular bandwidth. Thus, Hwang does not disclose an analog-signal transformation unit that receives a medium-frequency analog signal, selects a bandwidth using RF switches and bandpass filters, and outputs the analog output signal at the selected bandwidth.

Thus, claim 1 is patentable over the cited combination of references. The Examiner also rejected claims 2 and 3 as being unpatentable over the combination of Antonio, Przelomiec, and Hwang. Claims 2 and 3 each depend from claim 1. For the reasons stated above, claims 2 and 3 are also patentable over the cited references.

Finally, the Examiner rejected claim 4 as being unpatentable over the combination of references used to reject claims 1-3, and further in view of Sutton. Claim 4 depends from claim 1. Sutton does not make up for the deficiency described above with respect to claim 1. Thus, claim 4 is also patentable over the cited references.

4. Conclusion

Applicant submits that the application is in good and proper form for allowance and respectfully requests the Examiner to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney, at 312-913-3317.

Respectfully submitted,

McDONNELL BOEHNEN
HULBERT & BERGHOFF LLP

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By: /Daniel P. Williams/
Daniel P. Williams
Registration No. 58,704